



More transparency, less complexity: How to boost federal IT yield

To improve IT performance and productivity, federal CIOs must first develop a detailed understanding of IT investments and reduce complexity in the IT portfolio. Only by pulling these two levers can CIOs consistently deliver higher yield per IT dollar.

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Faced with the hard reality of budget cuts, the pressing need for more robust IT security, and greater taxpayer expectations in a fast-changing technology landscape, chief information officers (CIOs) within the US federal government are under unprecedented pressure to increase IT productivity. This is a tall order; tomes have been written deploring the lack of productivity in federal IT spending and dissecting the structural and organizational challenges that hinder greater public-sector IT yield.

The US government's Office of Management and Budget has set out sensible guidelines and policies for reforming federal IT management that begin to address the fundamental challenge: ensuring that every dollar spent on IT delivers

the maximum benefit for US taxpayers. These policies will take time to achieve optimal scale. Meanwhile, as federal CIOs go about their daily work, they must constantly keep in mind the twin mandates to deliver more but spend less.

Many levers can be pulled to deliver higher IT yield per dollar. Two, however, enable the effectiveness of virtually all the others. The first is increasing transparency into the performance and health of IT investments—that is, the short- and long-term strength of these investments. Transparency is crucial; after all, it is impossible to govern or manage what one cannot see. The second lever is reducing complexity: of IT investments, programs, and execution. In our experience, agencies pay too little attention



to these levers, and thus diminish the impact of the other actions they may take. The result is a failure to achieve sustainable improvements in IT productivity and performance.

Increasing transparency

The first order of business for a government CIO should be to dig down to the bedrock facts about IT performance and health. Agency leaders must understand the sources, uses, effectiveness, and efficiency of IT funds in enough detail to be able to make informed decisions about strategy, operations, and governance.

This is challenging, given the public sector's labyrinthine appropriations, budgeting, acquisition, and organizational processes and structures. One agency, for example, invested six months in developing an elaborate governance process, only to realize that the process addressed less than 10 percent of the agency's total technology spending. Much of the IT spending was not visible to agency leadership because it was not managed in a consolidated pool; units within the agency had direct lines of appropriation, and most IT spending was hidden in individual program budgets. Consequently, agency leaders were governing only the tip of the IT iceberg.

In another example, a government department's IT spending was dispersed across about a dozen organizational silos, each of which spent at least \$30 million on IT annually. Very few of the department's senior leaders realized that its total spending on IT amounted to more than \$1 billion. The department's scale qualified it as one of the world's largest IT shops, yet it was effectively operating as a set of much smaller organizations, leaving on the table efficiency improvements on the order of 30 to 40 percent. The same assessment that revealed these facts

also brought to light huge variations in the prices that the department's agencies paid for comparable products and services (Exhibit 1).

The aggregated data were revelatory to senior executives. Equally eye-opening was the fact that most of the inefficiency was driven not by the IT community but by each organizational silo's need for control and by the lack of cross-agency visibility into performance.

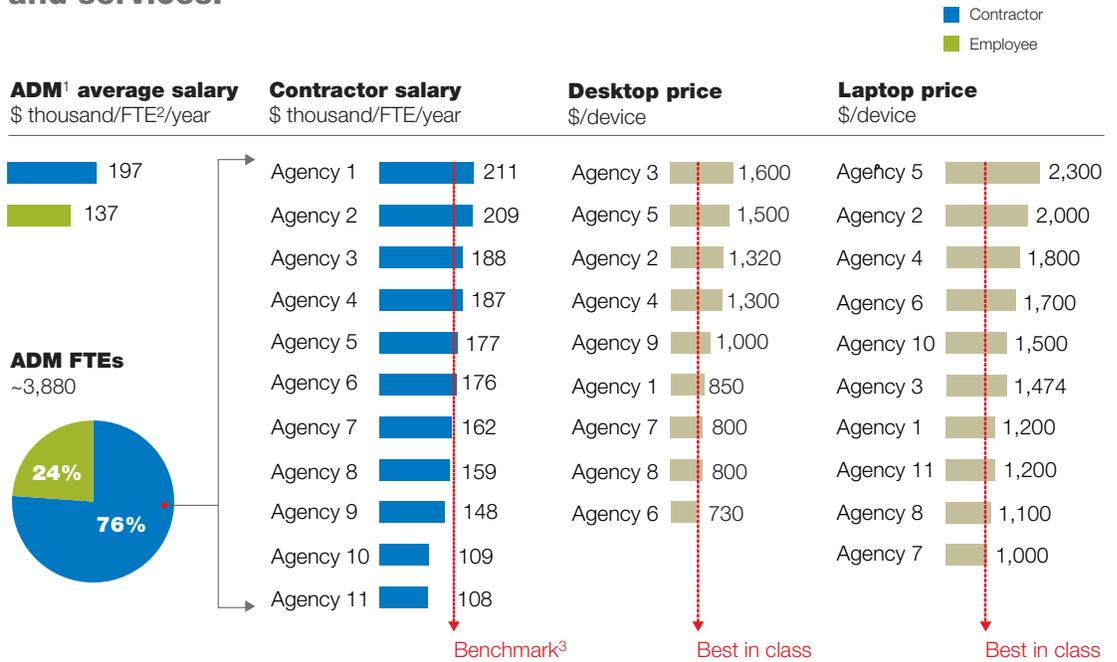
The department's investment in transparency more than paid off. Once the potential for efficiency improvements became clear, the department was able to take steps to capture it—for example, by shifting to best pricing for laptops and desktops, developing a product catalog to minimize unnecessary customization and increase the organization's buying power, and creating standardized rate cards to help agencies evaluate contractor labor wages. These actions have put the department on track to save approximately \$100 million per year.

Transparency begets trust, and trust begets effective governance. It is remarkable how much effort the government spends on audits and “checkers checking checkers,” yet how little is actually learned about true return on IT investments. Ironically, the current inspection-oriented mind-set puts people on the defensive, creating less incentive for transparency.

The right kind of transparency—focused on outcomes, ratios, yields, and quality, rather than on checking the box on inputs, budget and schedule adherence, due process, and forms and procedures—will greatly improve the level of trust within and across agency boundaries. Federal CIOs and agency leaders should regularly conduct a rigorous “IT transparency checkup.” Often, such a checkup entails detailed, line-item-level

Exhibit 1

Agencies pay widely varying prices for similar products and services.



¹Application development and maintenance.

²Full-time equivalent.

³Public-sector weighted average of like-for-like roles.

Source: Federal Data Center Consolidation Initiative (FDCCI) data; agency data; interviews

analyses of vendor contracts, as well as a thorough review of an agency’s technical and managerial policies for every IT cost category. CIOs should also ask themselves a series of questions regarding both the current performance of IT and its long-term health.

IT performance: How efficient and effective are we?

- Are our IT assets and vendor contracts well utilized? Are we truly operating at scale? What efficiencies could we gain from consolidation and centralization of services and pooling of IT labor resources?

- How productive are our application development and maintenance (ADM) staff and third-party providers?

- If we deliver above-average to best-in-class efficiencies, how much of our budget could we free up to fund higher-value initiatives?

IT health: Are we investing in the right priorities and in the right proportions?

- How much of our IT budget directly supports mission-specific applications and processes, and how much is allocated to utility IT and basic enterprise support? Should we be allocating

our resources differently? Where should we invest more, and where should we reduce our expenditure?

- Where could IT play a truly transformative role in both improving our core business processes and innovating how we deliver on our mission?
- How effectively do we manage demand for IT dollars? Do we handle trade-offs well, or do we avoid conflicts and thus make sub-optimal decisions?
- Are we developing in-house talent in pivotal jobs and skill sets, or are we too dependent on contractors?

The upside of conducting a regular transparency checkup is significant: from 30 to 40 percent in yield improvements and, counterintuitively, license to invest more in IT.

Containing complexity

The second critical enabler in improving the federal government's yield per IT dollar is reducing *avoidable* complexity. Eliminating complexity in general is not the right goal; much of what the government undertakes is intrinsically complex, and often the IT required to support it is necessarily complex as well. For example, there is simply no parallel to the IT systems that enable the US Air Force's supply and logistics chain, which stretches across several hundred bases around the world, to deploy aircraft, personnel, and munitions at a few seconds' notice. Furthermore, unique government-appropriations and acquisitions regulations add legitimate complexity to both IT and non-IT investments.

That said, CIOs must make every effort to contain unnecessary complexity, because added

complexity has an exponential rather than a linear effect on budget, schedule, and functionality risk. Reducing the complexity of large-scale projects is the subject of part of another article (see "Seven imperatives for success in IT megaprojects," p. 28); here we focus on three ways to contain complexity in all projects within an IT portfolio or in an enterprise.

Segment projects by complexity. The IT portfolios of most government agencies consist of three broad types of investments: a handful of complex, large-scale projects; a base load of utility services (such as end-user device management and data-center operations); and a steady, modest flow of low-complexity maintenance and enhancement projects. Because these projects have different levels of complexity, they should be treated differently. However, agencies often have a one-size-fits-all process for conceiving, approving, and executing projects of all kinds.

Some federal CIOs have started to create different "swim lanes" of process flow for investments, depending on their size and complexity. By simplifying the requirements, approval, and acquisition processes for smaller, less complex projects, they reduce cycle time by as much as 40 percent, deliver quick wins, and free up time to focus on larger, more complex projects.

Another major opportunity for CIOs is to create a catalog of services, with clear internal pricing and service-level agreements, for the core utility IT functions. A service catalog gives users clarity into what they are actually paying for. It also makes ordering, installing, servicing, and charging for IT products and services faster and easier. The focus here is on service levels, demand management, utilization, and unit-cost reduction; metrics for each of these can be communicated and managed using a simple

scorecard. By introducing a service catalog supported by industrial-strength delivery models, agencies can free up capacity that they can then devote to containing large-program complexity.

[Plan and budget for interface complexity.](#)

There are three main types of interfaces that contribute to program complexity: interfaces to enable data transfer between systems; organizational interfaces, which are needed when a system requires funding, resources, people, or data inputs from multiple organizations; and end-user interfaces. Systems interfaces are usually reasonably well-handled by integrators. However, program designers typically underestimate the complexity in organizational and end-user interfaces.

Rarely do the priorities of two organizations align perfectly, and budgets and schedules almost never account for interorganizational delays. For example, one agency's inventory-management system required more than 50 systems interfaces that spanned 12 different organizations, each with its own IT priorities. The coordination of interoperability and data-integrity tests with the release schedules of each of the 12 different organizations caused a delay of nearly six months—and because the agency was carrying \$4 million in monthly fixed costs for a program-management office, the delay cost almost \$25 million. Had the agency designed the test modules in a way that would not require parallel testing in multiple organizations, it could have avoided or shortened this delay. Phenomena of this kind can be modeled to a significant degree, allowing an understanding of likely organizational complexity early enough to inform design, funding, and deployment decisions.

Many government agencies use cost and schedule models that do not sufficiently account for the nonlinear effects of interface complexity. These flawed models lead to unrealistic investment cases; programs are predestined to “fail” because ingoing assumptions are fed into linear models that underestimate the true cost of complexity. Programs that overrun their budgets and schedules are labeled “failures” because they miss the modeled expectations, which were unrealistic from the outset. Many of these programs would still be sound investments because the business value offsets the costs and complexity risks.

[Design vendor contracts to match program complexity.](#)

Government agencies negotiate different types of vendor contracts, the three most common of which are fixed-price, cost-plus, and time-and-materials contracts. Many agencies believe a fixed-price contract shifts risk to the vendor, but in reality IT vendors are quite sophisticated: they protect themselves either with requirements-change or customer-delay clauses, or by charging a premium to cover the risk. Poor vendor management is one reason that many government programs are one-third to one-tenth as productive as private-sector programs (Exhibit 2).

Few complex IT programs are well suited to monolithic fixed-price or cost-plus contracts. Program elements are not all the same; therefore, contract elements should not be all the same. The art is in designing and negotiating different contract elements for modules within the same program.

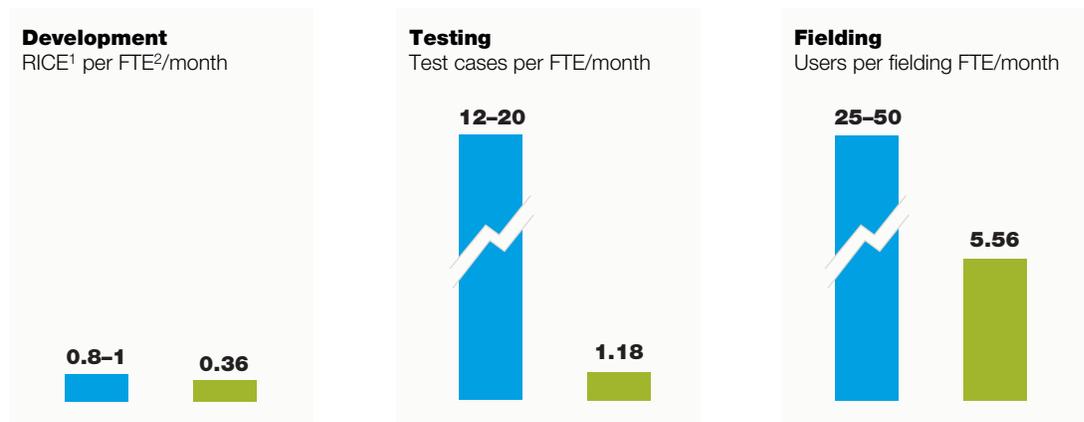
Because the battle against complexity can be won or lost at a program's inception, it is vital that

Exhibit 2

Poor vendor management contributes to considerably reduced productivity in one agency's IT programs.

US AGENCY EXAMPLE

■ Private-sector performance
■ Agency performance



¹Reports, interfaces, conversions, extensions.

²Full-time equivalent.

Source: Agency data; commercial ERP experts; McKinsey analysis

agencies maintain control of a program's scope and requirements. Unfortunately, agencies often outsource the scoping and requirements-gathering process to vendors, which typically have little incentive, perspective, or power to limit a project's scope and requirements. A clear scope, frugal requirements, and aligned sponsorship make it easier to more sharply define modules of functionality within a program: standard or semistandard use cases (such as basic data cleanup or encoding) can be negotiated at a fixed price, while more complex elements (such as interoperability tests) might be better suited to time-and-materials contracts.

We have too often heard government leaders say, "We keep funding IT, but we don't know what we're getting in return." Making the performance of IT transparent and easily understood is the first step in the journey toward higher yield per IT dollar. Agencies must then eliminate unnecessary IT complexity, putting into practice the gist of Albert Einstein's method, "Make things as simple as possible, but no simpler." Through greater transparency and reduced complexity, IT can better play a transformational role in the efficiency and effectiveness of every government agency. ○

